



Institute for Materials Science

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CMS Colloquium - Sponsored by IMS



Professor Stuart Brown
Experimental Condensed Matter
University of California, Los Angeles

Charge Fluctuations and Superconductivity in Organic Conductors: the case of β'' -(ET)₂SF₅CH₂CF₂SO₃

Wednesday, October 21, 2015

3:00 - 4:00pm

IMS/MPA Conference Room, TA-3, Bldg 32, Rm 134

Abstract: Superconductivity in most organic charge transfer salts is considered magnetically mediated, in part because of the proximity of the superconductivity to antiferromagnetic ground states as well as the preponderance of spin fluctuations in the normal state of the superconducting compounds. An alternative proposal is based on mediation by charge fluctuations. The idea follows from the observation that poorly screened near-neighbor Coulomb repulsions V are sufficiently strong in some cases to produce charge-ordered insulating states. In tuning the relative amplitude of V smaller, the charge-ordered state would collapse. The proposal that superconductivity emerges from the leftover fluctuations is examined in the context of the normal state and superconducting properties of the all-organic salt, β'' -(ET)₂X, with $X = \text{SF}_5\text{CH}_2\text{CF}_2\text{SO}_3$.

This CMS Colloquium talk on Wednesday and Stuart's visit - Wednesday 10/21 through Friday 10/23 - are supported by the Institute for Material Science (IMS) at LANL.

If you would like to discuss with Stuart Brown during his visit please contact Eric Bauer (edbauer@lanl.gov)

Hosted by Eric Bauer